Houghton-le-Spring.
February 7th 1898.

To the Urban District Council of
Houghton-le-Spring.

Mr Chairman and Gentlemen,

It is again my duty to lay before you my Annual Report for the Urban Division of Houghton-le-Spring Union for the year ending December 31st 1897.

Accompanying my report are the Tables "A" and "B" of the Local Government Board, the former relating to the deaths classified according to diseases, ages and localities and the latter to the New Cases of Sickness that have occurred during the year.

By referring to table "A" it will be seen that 108 deaths have been registered during the year; but as 9 of the deaths which took place in the Workhouse belonged to other districts, the actual number of deaths upon which the mortality must be based becomes reduced to 99.

<u>Death-rate</u>: Of the total number of deaths, 40 were under the age of five years and 59 above that period of life. If we estimate the population at the middle of the year as requested by the Local Government Board at 6.760 this is equivalent to a death-rate of 14.64 per 1.000 per annum and an infant mortality of

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40.39 per cent. The number of deaths under one year per 1.000 registered births is 131.1. The subjoined table gives the rates of mortality for the last four years as well as for the four quarters under consideration.

Year.	Death-rate per 1.000 per annum including Workhouse.	Infant mortality.
1894	20.08	49.6
1895	24.29	46.29
1896	20.09	46.2
1897	15.9	37.03

1897 Quarters	Death-rate including Workhouse mortality.	Infant mortality.
1st	14.9	23.7
2nd	14.1	33.3
3rd	14.18	44
4th	15.18	55

<u>Births</u>:- The births for the year number 305:-

151 Males

154 Females

which is equivalent to a birth-rate of 45.1 per 1.000 per annum and a natural increase to the population of 206. The following table gives the number of births - male and female including birth-rate and natural increase to the population for the last four years:-

Year	Births	Males	Females	Rate	Increase
1894	298	149	149	45	163
1895	263	124	139	39.4	101
1896	304	160	144	45.2	172
1897	305	151	154	45.1	206

In table "A" as I have already said the mortality is classified according to Diseases, ages and localities.

Reviewing the deaths in relation to their causes and following the order in which they appear in the table we find that

3	are	due	to	Typhoid Fever.
1	is	"	"	Croup.
2	are	"	"	Diarrhœa and Dysentery.
14	"	"	"	Phthisis.
12	"	"	"	Bronchitis &c.
16	"	"	"	Heart disease.
2	"	"	"	Injuries.
58	"	"	"	All other diseases, viz:-

Scrofulous diseases	2
Cancer	7
Dis. of the Nervous System	9
Convulsions	9
Atrophy	5
Dis. of the Digestive Organs	8
Dis. of the Urinary Organs	2
Child-birth	1
Premature birth	10
Old age	3
All other diseases	2
	58

The subjoined table gives the death-rate per 1.000 from the principal Zymotic diseases for the last three years:-

	Diseases.	1895	1896	1897
1.	Small Pox.	—	—	—
2.	Scarlet Fever	—	—	—
3.	Diphtheria and Membranous Croup	.44	—	.14
4.	Typhoid fever and Continued fever	.44	.74	.44
5.	Measles	—	1.48	—
6.	Whooping Cough	.89	.59	—
7.	Diarrhoea & Dysentery	1.3	—	.27
8.	Phthisis	1.04	1.3	2.07
9.	Acute dis. of the lungs	4.04	2.3	1.7

New Cases of Sickness.

The Infectious Disease Notification Act has been in force in this division of the Union since February 1st 1890.

On receiving the Notification Forms it is my invariable practice to visit and inspect the premises occupied by the patient with as little delay as possible and to give such instructions as to isolation and disinfection as the nature of the case may require. But to those acquainted with the district it must be obvious that home isolation is practically impossible. This is a mining community with a large birth-rate, and as the coal-trade is brisk the demand for houses is exceptionally great; many of the miners having to seek houses outside the district altogether so that the resources of the family are often severely taxed in order to provide proper sleeping accommodation with a due regard

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for the separation of the sexes.
Your inspector makes an independent inspection on his own account and acquaints me with whatever sanitary defects his rounds of inspection may reveal.
<u>Disinfectants</u>. These are supplied free of charge and your inspector himself often personally superintends their use. We have a portable disinfecting apparatus which we use in all possible cases unless we receive from the medical attendant satisfactory evidence that the contaminated articles have been properly disinfected.
Under the Infectious Disease Notification Act, 40 cases have been notified during the year as against 68 for the previous year, viz:-

21	of	Typhoid Fever.
11	"	Erysipelas
7	"	Scarlet Fever.
1	"	Croup.
40	Total.	

They are arranged according to localities and ages, as shown by the subjoined table:-

	Lower Class.		Scarlatina.		Erysipelas.		Croup.	
	Over 5 yrs.	Under 5 yrs.	Over 5 yrs.	Under 5 yrs.	Over 5 yrs.	Under 5 yrs.	Over 5 yrs.	Under 5 yrs.
The Mortehouse					1			
Prospect Row	1				1			
Boarding Sc.	2							
Robinson Sc.	3			1	2			
Hulchard Sc.					1			
Union Sc.	1							
Hopson Sc.							1	
Marshall Place	1		1					
Gilling Row			3	1				
Peacham Place					5			
Sunderland Sc.	2				1			
Richardson Sc.	1		1					
Alan Porter	2							
O'Neill Sc.	1	1			1			
Charlotte Place	1							
George Sc.	1							
Edwin Sc.					1			
Totals	10	1	5	1	11		1	
	31		7		11			
	40							

Typhoid Fever cases in 1894.

Date	Names	Age	Sex	Occupation	Remarks.
Jany 11th	Jno. Jrideson	18	M.	Miner.	Nothing.
"	Eliz. Rainbell	8	F.		Cholera infantum.
"	Jane —"—	6	F.		
Feby 9th	J. Cummings	22	M.	Miner.	Nothing.
Apr. 1st	Flor. Todd	10	F.		—"—
July 1st	G. Bainbridge	26	M.	Miner	Stopped up Respir. chain. Carcinoma lower & middle lobe. Age.
" 22nd	Jno. Scott	9	M.	—"—	Nothing
Sept. 1st	W. Stott	17	M.	—"—	Pulmonary bathing in brown.
" 10th	Rbt Napier	24	M.	—"—	2nd attack, [illegible] Malingerer taken to hospital in [illegible].
" 21st	Thos. Miles	8	M.		Nothing.
" 22nd	Louisa Allen	18	F.		Pig-meat in yard.
" 23rd	E. Summers	20	F.		Constipation & fever and other defects.
24th	Thos. Adamson	24	M.	Draper.	Nothing.
27th	W. T. Adamson	28	M.	Miner.	Had fever a year ago, complained of weight.
" 28th	E. Harris	27	F.	Widow.	Had fever in family. Committed suicide 1 year ago.
Oct. 4th	Mary Johnston	48	F.	Mrs	Nothing.
" 10th	Eliz. Gibson	33	F.	—"—	—"—
8th	Jno. Blair	16	M.	Miner	—"—
	Rbt Ferrier	25	M.	—"—	—"—
Nov. 10th	Wm. King	18	M.	—"—	—"—
12th	A. Richmond	2	M.		—"—

Months.	Typhoid		Scarlatina		Erysipelas		Croup	
	over 5 yrs.	under 5 yrs	over 5 yrs.	under 5 yrs.	Over. 5 yrs.	under 5 yrs.	over 5 yrs.	under 5 yrs.
January	3			1				
February	1				1			
March			1				1	
April	1							
May					1			
June								
July	5		1		3			
August								
September	8				1			
October	4		1		1			
November	1	1	1		1			
December			1	1	3			
Totals.	20	1	5	2	11	"	1	"
	21		7		11		1	
	40							

<u>Small Pox</u>. Not a single case of this terrible and loathsome disease has been notified in this division of the Union since January 1893.

<u>Scarlet Fever</u>. We have been wonderfully free from Scarlet fever during the past year. This is the more gratifying inasmuch as for years back it has assumed something of the proportions of an epidemic. There was a marked absence of that infectivity which is so characteristic of the disease as was shown by the immunity enjoyed by the other members of the family when brought into contact with the sick. No doubt our comparative

freedom from the disease may be attributed in some measure to this peculiarity.

Diphtheria. The decrease in the number of Diphtheria cases commented upon by me in my last yearly report happily still continues, as during the last year not a single case has been notified. Considering that only a few years ago we suffered from an epidemic of the disease, and that all over the country it is looked upon as the one disease that has proved most intractable to the Sanitarian, we have every reason to feel grateful for the immunity we have enjoyed.

Croup. The solitary case of Croup occurred in Hopper St. in the month of March last. There was nothing defective about the premises which were well kept and the parents were probably right in ascribing the illness and death - for the case had a fatal termination - of their little girl to cold, as she had been seen by the neighbours sitting on the cold damp grass on the evening of her illness.

Typhoid Fever. There is a most invaluable and gratifying decrease in the number of infectious cases notified during the year, although we cannot but regret that the Typhoid cases exceed those of the previous year by two. As I have repeatedly remarked the houses of our mining population are good and well kept, and our drains and sewers are regularly and systematically flushed. The scavenging upon the whole is well carried out, so that it is difficult to account for these

outbreaks of the disease in which from 4 to 6 persons are involved. In such outbreaks - and they are yearly becoming more frequent - the cases break out almost at one and the same time, or within an interval and under conditions highly suggestive of some common source of infection. With regard to the individual or solitary cases we not infrequently find some sanitary defects of a character likely to account for the disease; but upon the whole the cases associated with such defects singularly few. Under the circumstances I advised your authority to co-operate with the Rural District Council and have the water Bacteriologically examined as Chemical and Microscopical examination had from time to time shown it to be subject to intermittent pollution. This was agreed to and on the 5th of November Professor Murray of Newcastle took five samples of the water in order to test for the Typhoid bacillus.

<u>Cholera</u>. As I have said not a single case of Asiatic Cholera has existed in the district during the long number of years I have had the honour to serve under your Authority.

<u>Erysipelas</u>. The cases of Erysipelas were of the most ordinary type while the houses in which they occurred were orderly and well kept and there was no evidence of sanitary defects.

<u>Measles</u>. With regard to Measles we have been singularly free from the disease during the past year as only four cases have come to my knowledge.

<u>Whooping Cough</u>. We have been singularly

[illegible] from Whooping Cough as well, as I am only aware of two cases having occurred in this division of the Union during the year.

Chicken Pox. Only two cases of Chicken Pox have come to my knowledge during the year. They were of the most ordinary type and free from all constitutional disturbance.

Diarrhoea. During the month of August we suffered from an epidemic of Diarrhoea which I have no doubt was due to the intense heat and improper feeding. As was to be expected the very young and the very old suffered most. Happily the mortality was small as compared with the number of persons affected.

Influenza. During the first and again in the last quarter of the year - as has been the case for some years back - we suffered from Influenza. In the first quarter it assumed something of the character of an epidemic, while in the last quarter the cases were decidedly fewer. Year by year it is becoming milder in form and less infectious, and although cases are still to be found that require careful treatment and nursing, it does not excite in the minds of the people anything like the fear or dread which it did when it first made its appearance amongst us, nor is the period of convalescence so long or tedious.

Pneumonia and other inflammatory affections of the lungs are rather common in these parts [illegible]

of the mortality table. This no doubt is due largely to the cold North East winds which prevail from time to time during the first and last quarters of the year and the fogs or sea fret from which also we not unfrequently suffer. No doubt our high birth-rate contributes in some measure to this high mortality as the very young and the very old are those who usually succumb to such affections owing to their inability to resist such sudden and severe changes of temperature as usually accompany such atmospheric conditions.

With regard to other forms of sickness it is difficult to say whether Cancer is on the increase or not. The cases are certainly more numerous all over the country than formerly; but this increase may be more apparent than real and due more to improved methods of diagnosis than to any actual increase in the disease itself.

<u>Milk</u>. As a rule our milk is both plentiful and of fair average quality, although convictions for adulteration with water have been obtained by the County Council who are to be congratulated and encouraged in their efforts to protect our food-stuffs from adulteration, as all such practices should be sternly put down.

<u>Meat</u>. The meat offered for sale has been up to the standard of previous years, so that there has been no occasion to take proceedings against any of the butchers for killing or offering for sale meat of a poor or doubtful quality.

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Food and Drugs Act. Proceedings under this Act are also taken by the County Council.

The Public Health Act Amendment Act and the Infectious Disease Prevention Act are now adopted by your Authority.

Dairies and Cowsheds. These are regularly and systematically inspected by your Inspector and report, and as a rule they are well kept and in accordance with the provisions of the Act.

Slaughter Houses. These are also regularly and systematically inspected and although many of the animals are slaughtered in the shops the offal &c. is at once removed to a suitable and safe place so that everything is kept clean and orderly.

Lodging Houses. These are periodically inspected and the occupiers are instructed to give immediate information to your Medical Officer of any sickness occurring among their lodgers so as to guard against the possible introduction and spread of infectious disease and these instructions have as a rule been faithfully carried out.

Water. The total consumption of water for the year has been 20.143.000 gallons, of which 3.931.000 gallons were used for trade purposes and 175.750 for watering the streets and flushing the drains, thus leaving 16.242.750 gallons for domestic purposes which is equal to a consumption of over ten gallons per day per head in the population.

the population upon the larger figure.
Although our drinking water has for years back been subject to intermittent pollution, the Bacteriological examination made by Professor Murray of Newcastle on Nov 5th by which I herewith append a copy of his report, showed it to be of high quality and free from the specific organism of Typhoid fever for which it had been carefully and specially tested.
Two samples were taken from the rising main, the Houghton and Newbottle reservoirs and a tap at Newbottle village and Houghton respectively, so as to give satisfaction to both Authorities, and to localize, if possible, whatever pollution the examination might reveal.
Considering therefore the exhaustive process to which the samples were subjected, during the examination, it is matter for general rejoicing that the result is so satisfactory.
I mention also that the Chemical examination made by Mr Lehrman, Analytical Chemist, Bamber Bridge, was also satisfactory.
Although we have no super-abundance of water we have always had sufficient for our wants. Owing to the waste caused by careless persons leaving their taps running, the water was ordered to be turned off every night at ten but as this hour was considered too early it was altered to eleven. This is a better arrangement and will practically effect the same saving and provided with baths and water closets will be found sufficient.
<u>Bylaws & Regulations</u>. These we have revised and there have been added

have always been carried out with a regularity and efficiency highly creditable to those engaged in the work.

Hospital accommodation. A proper and desirable site for an isolation hospital has at last been obtained and at your request your able and energetic surveyor has prepared plans and specifications for a stone and mortar building which will accommodate eight beds. After the necessary sanction has been obtained it is your intention to proceed with the work at once. This is a matter for general satisfaction as for years back we have been seriously handicapped by the want of such an institution.

Scavenging. The scavenging upon the whole is fairly well carried out, but I should like to see the practice more common of scooping the refuse direct into the carts in place of on to the ground. The improved receptacles afford every facility for this and all new receptacles are now of that type; as the danger arising from surface pollution under the old system is difficult to over-estimate, and would therefore be avoided.

Ventilation of Sewers. Owing to the intolerable stench arising from some of the surface ventilators they had to be covered over with metal plates and as the proper ventilation of the sewers was thus seriously interferred with it was decided at my suggestion to discard the old system and ventilate by means of ascending shafts. The plans and specifications have already been prepared by your Surveyor and tenders are now solicited for the work.

that everything will be ~~con~~ carried out with as little delay as possible.

<u>Back Streets</u>. Your Council are alive to the necessity of keeping the back streets in good order. Back D'Arcy Streets have already been done up. Your surveyor is instructed to proceed with back Sunderland Streets including Elizabeth, Mildred and Edwin Streets.

The footpaths and crossings all over the town have been repaired and done up; and the Market Place, which was without a footpath, has now been provided with one. This is a decided improvement and is highly appreciated by the inhabitants

At Chilton Moor the footpath has been continued from the Long Row to the Church.

Durham Road:- The footpath along the Durham Road has been ~~tarpaulted~~ asphalted and re-curbed and a drain laid down to carry off the surface water which in wet weather used to accumulate and prove disagreable to foot-passengers.

<u>New Houses</u>. Owing to the briskness of the coal trade and the consequent demand for workmen's houses, a great impetus has been given to the building trade with the result that more new houses have been built during the past twelve months than in any like period during the long number of years I have held office under Your Authority. In addition to the two new streets that have been laid out 48 new houses with rooms ranging from 3 to 6

have been built and occupied and provided with improved receptacles.

Sewers. Great inconvenience and [illegible] suffered during the summer months and after protracted periods of drought. At North View Terrace the cesspool has been done away with so that the houses are properly drained. Owing to the situation of Sumner & Brown's House there was not sufficient fall to enable the drains to be connected with the main sewer, so that a separate road had to be built in the garden. This and Brown's Square must afterwards and so the houses were often flooded up to the waist. A special system of drainage had to be provided with the result that a most objectionable and unseemly state of things has been done away.

The old settling tanks at the Sewage Farm have now been abolished.

In addition to the work summarized in the printed form of the County Council there work of a more or less substantial kind has been carried out by the Colliery Owners, who, as you know, gentlemen, employ a large staff of men to keep in repair the large number of houses occupied by their workmen.

For example in the Big House yard, Market Place some old property was pulled down and sewed and the other buildings repaired.

At Tondewynn Square the old outbuildings were pulled down and replaced by improved receptacles with [illegible] and the footpath in the Square generally [illegible]

D'Arcy St, Prospect Row, and Lambton St. – Many of the houses and out-offices in these streets have been done up and put into thorough repair and additional sinks have been added and the streets and footpaths overhauled.
Some of the old-fashioned houses of the Lower Row have recently been converted into Government property and as this kind of property requires careful supervision your Council have wisely decided to make new bye laws under section 90 of the Public Health Act.

Death-rate.

The general sickness during the past year has been of the most ordinary kind and much below the average of recent years.
In estimating the mortality I have placed the population at 6,760 but this is obviously too small and 7,001, the population estimated by me would be nearer the mark.
The death-rate upon this estimate of the population would be 14.1 in place of 14.14 as stated in the tables.
For a mixed population, such as ours consisting largely of not exclusively of miners engaged daily in the arduous duties of their calling the death-rate – which under the most favourable conditions would be considered small – is remarkably low indeed.
I have inspected the district from time to time both alone and in conjunction with your inspector who takes a keen interest in the sanitary requirements of the town.

things considered, I think your Court are to be congratulated upon the satisfactory state of the Public Health.

I have the honour to be,
Mr Chairman & Gentlemen,
Your obedient servant,
[illegible]
Medical Officer.

Dr Hill's return of the two deaths which took place in the County Asylum to persons belonging to this division of the Union did not reach me until after my Report was finished. One of the cases, however, cannot be said to belong to the Houghton district, inasmuch as Ann Humble formerly resided at West Rainton and was only in the Workhouse here a short time before her removal to the Asylum.

Report on a Sample of water, received from Dr Park, Abington-le-Spring.
June 23rd 1894.

As the result of my analysis of this water, I find the same to be highly satisfactory in almost every way.
The low absorption of oxygen from potassium per-manganate is indicative of a very pure water organically, while from the total absence of Albuminoid Ammonia it is evident that level impurity as there is cannot have an origin.
Again, the small proportion of inorganic Nitrogen is an excellent feature for, on this account there never can at any period of the water's course from its origin have been any contact whatever with any material or excreta.
With the aid of the Microscope there were observed in the water :-
1. Pieces of coarse ferruginious mineral matter
2. Finely granulated matter.
3. Diatoms.
4. A few starch grains, micro-organisms, fibres.
Of these the only item calling for special notice is the Starch. Had the chemical analysis been otherwise than excellent this might have given cause for suspicion, but the appended figures being as they are no importance can attach to the presence of Starch.
As an extra safe-guard, perhaps, it would be as well to have the water examined regularly at different seasons of the year in order to make sure that the figures do remain constant.

The present figures are :-

	Grains per gallon.
Total solid matter (dried at 100°C.)	78.5
Nitrogen, as Nitrates and Nitrites	.1153
Free and Saline Ammonia	.0028
Total Inorganic Nitrogen	.1176
Albuminoid Ammonia	None
Oxygen absorption in 4 hrs. at 80° F.	.0210
Chlorine as Chlorides	3.4
Poisonous metals & Phosphoric acid	None

(Signed) G. P. Lishman, B.Sc.
Bunker Hill Laboratory
June 29th 1894.

obtained was from the rising main [illegible]
The sample was accordingly taken from
tap in the rising main just before it [illegible]
into the reservoir.
The water in the Houghton Lower Reservoir was
very clear the bottom being visible at a depth
of some 8 or 10 feet; the surface of the water
was however not quite clear. The sample of
water was taken from this reservoir close to
the outlet.
The water in the Rural District Reservoir is
fed from the Lower Houghton Reservoir and
looked very clear. A sample of it was also taken.
The water from this reservoir is passed along a pipe
to Newbottle which is about a mile distant.
A sample of the water thus supplied was taken
from the public tap in the village of Newbottle.
The water in the Lower Houghton Reservoir is
carried directly in pipes to the houses in
Houghton-le-Spring. A sample of this water
obtained from a tap which came directly
from the main behind a cottage situated
next door to the offices of the Houghton Colliery
at the foot of the hill upon which the reservoir
stands.
The samples thus collected were taken to the
Durham University Bacteriological Laboratory
in the College of Medicine at Newcastle and
the examination was commenced four hours
after the samples had been collected.
In order to ascertain the number of bacteria
present in the samples of water two methods
of selection [illegible]
[illegible]

and the other half a cubic centimetre measured by sterilized pipettes. The gelatine plates thus prepared were placed in moist chambers in an incubator the temperature of which was maintained at 22° C.

The material in the water was by this means distributed throughout the gelatine in which they multiply and form colonies which can be counted, each colony representing one microbe present in the original sample.

The number of colonies which developed on the plates were counted at the end of 48 hours in some cases, as the liquefaction of the gelatine by some of the colonies did not permit of their being kept longer, and in others at the end of 72 hours. The numbers given are the mean of the two observations made in each case. It may be mentioned here that one cubic centimetre of a good drinking water should not contain more than 100 bacteria (400 in one drachm)

The water taken from the Kissing Tree contained twelve colonies for one cubic centimetre of water, so that the samples of water taken from the point nearest the source in the pit contains only 12 bacteria in each cubic centimetre (48 in each drachm).

The water taken from the Houghton West Reservoir contained 63 bacteria in one cubic centimetre (252 in one drachm.) of which 18 liquefied gelatine.

The sample collected from the tap in Houghton by Spraying contained [illegible]

2. Liquefied gelatine.

The sample taken from the Public Reservoir was found to contain [illegible] in one cubic centimetre (1 cc = one c.c.) of which liquefied gelatine.

The water taken from the Public Tap in Newtown was found to contain [illegible] in one cubic centimetre (1 cc = one c.c.) in order to facilitate the search for the [illegible] of Typhoid fever germs [illegible] were prepared in each of [illegible] 2 cubic centimetres of water and [illegible] Carbolic Acid. [illegible] acid which according to Typhoid Bacillus [illegible] to possibly account for the growth or many of a bacilli and especially of those which [illegible] the gelatine. The plates were incubated at 22°C. Many colonies which developed were examined from [illegible] the Bacilli were determined by [illegible] the microscope and [illegible] in dry [illegible] and [illegible] Gelatine [illegible] accumulation [illegible] will not be necessary to decide the various Coli [illegible] the Bacillus [illegible] from the [illegible] manner as [illegible] of Horse [illegible] found to [illegible] the [illegible] and [illegible] of the [illegible] of Typhoid fever.

The result of the special examination for Typhoid Bacilli [illegible] the type [illegible] to have not been found.

[illegible]

which is of greatest importance contained only 12 bacteria in one cubic centimetre.
As already mentioned any number below 100 bacteria in one cubic centimetre is generally considered to be not excessive for ordinary drinking water, so that a water which contains only 12 is very satisfactory. This small number indicates, I consider, that the water from the pit was not being contaminated by surface drainage at the time the samples were taken after a period of dry weather.
The water in the West Houghton Reservoir contained 63 bacteria in one cubic centimetre. This excess over the number in the water taken from the rising main may be due to micro-organisms falling from the air into the standing water or to a multiplication of the micro-organisms taking place while the water is standing in the reservoir.
The water taken from a tap at the back of a house in Houghton at the foot of the hill on which the reservoir stands was found to contain almost exactly the same number of bacteria as the water in the Reservoir i.e. 64 in one cubic centimetre. This is what might be expected considering the short distance the water has to travel from the reservoir.
The water taken from the Rural District reservoir contains more bacteria than that taken from the West Houghton Reservoir, 135 in one cubic centimetre. This may be due to the water having stood longer exposed to the air.
The water taken from the tap at Newbottle contains fewer than the water in the Rural

District reservoir, 20 in one cubic centimetre. This diminution is probably owing to the fact that the water has to pass for a mile or so through pipes in which a certain amount of seeding takes place. I have found a similar diminution after passing some distance along pipes in another place.

It will thus be evident that bacteriologically the water supplied to Houghton-le-Spring and Newbottle is in a satisfactory condition. The larger number of bacteria present in the reservoir shows that they are liable to contamination from the air and that the surroundings of the reservoirs should be kept very clean. On the day of my visit there was a very offensive smell just outside the wall surrounding the reservoirs indicating that refuse of some sort had been deposited there, this should on no account be allowed. The close proximity of two cottages to the reservoirs is also a possible source of danger as the occurrence of a case of Typhoid fever in either of them might lead to contamination of the water in the reservoirs with serious results in consequence.

(Signed) George R. Murray, M.A. M.D. Camb.
Health Professor of Comparative Pathology in
Durham University.

Rainfall in 1897.
at Hope Hall, Houghton-le-Spring in the County of Durham.

Rain Gauge { Diameter of Funnel 5 inches
Height of Top { Above ground 1 ft.
Above sea level 265 ft.

Month	Total depth in inches
January	1.61
February	1.72
March	2.84
April	1.10
May	1.52
June	2.31
July	1.70
August	2.22
September	2.40
October	1.50
November	1.48
December	1.42
	22.62 Total depth.

(Signed) D. Balfour, M. Inst. C.E.

K_2 3.

(A)

TABLE OF DEATHS during the Year 1897, in the Houghton-le-Spring Urban District, classified according to DISEASES, AGES, and LOCALITIES.

Names of Localities adopted for the purpose of these Statistics; public institutions being shown as separate localities. (See note 4 on back of sheet.) (Columns for Population and Births are in Table B.) (a)	Mortality from all causes, at subjoined ages. At all ages. (b)	Under 1 year. (c)	1 and under 5. (d)	5 and under 15. (e)	15 and under 25. (f)	25 and under 65. (g)	65 and upwards. (h)	(i)	1 Smallpox.	2 Scarlatina.	3 Diphtheria.	4 Membranous Croup.	5 Fevers. Typhus.	6 Fevers. Enteric or Typhoid.	7 Fevers. Continued.	8 Fevers. Relapsing.	9 Fevers. Puerperal.	10 Cholera.	11 Erysipelas.	12 Measles.	13 Whooping Cough.	14 Diarrhœa and Dysentery.	15 Rheumatic Fever.	16 Phthisis.	17 Bronchitis, Pneumonia and Pleurisy.	18 Heart Disease.	19 * Influenza	20 Injuries.	21 All Other Diseases.	22 Total.
Houghton.	92	30	12	9	5	16	20	Under 5				.		.								2		2	4	1			33	42
								5 upwds.				1		3										10	5	8	1	2	20	50
e Workhouse.	16	.	.	1	.	6	9	Under 5																.	.	.			.	.
								5 upwds.																2	2	7			5	16
								Under 5																						
								5 upwds.																						
								Under 5																						
								5 upwds.																						
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								5 upwds.																						
								Under 5																						
								5 upwds.																						
Totals	108	30	12	10	5	22	29	Under 5														2		2	4	1	.	.	33	42
								5 upwds.				1		3								.		12	8	15	1	2	25	66

The subjoined numbers have also to be taken into account in judging of the above records of mortality. *See Note 5 on back.*

Deaths occurring outside the district among persons belonging thereto.	2					1	1	Under 5																						
								5 upwds.																	1	1				2
Deaths occurring within the district among persons not belonging thereto.								Under 5																						
								5 upwds.																						

* The heading of column 19 is left blank for the insertion of Influenza, or any other disease which it may be thought desirable to record.

NOTES ON TABLES A AND B.

NOTE 1. *Medical Officers of Health of "Combined Districts" must make a separate Return for the District of each District Council.*

2. *Medical Officers of Health acting for a portion only of the District of a District Council should write, in the heading of the Table, the designation of the Division for which they act.*

3. *The words "Urban," "Rural," or "Metropolitan" must be inserted in the appropriate space in the heading, according as the District is Urban or Rural, or is within the Metropolitan Area.*

4. The "*Localities*" adopted for the purpose of these statistics should be areas of known population; such as parishes, groups of parishes, townships or wards.

As stated at the head of the first column in each Table, *Public Institutions* should be regarded as separate localities, and the deaths in them should be separately recorded. Workhouses, Hospitals, Infirmaries, Asylums, and other establishments into which numbers of people, and especially of sick people, are received are Public Institutions for the purpose of these statistics.

5. *The deaths which have to be classified in this Table* (A), and summed up in the horizontal line of "Totals," are the whole of those *registered* as having actually occurred in the several localities comprised within the Division or District. But the registered number of deaths frequently requires correction before it can give an exact view of the mortality of a Division or District; and the two lowest horizontal lines are provided for the purpose of enabling Medical Officers of Health to indicate, to the best of their ability, what the extent of such corrections should be. Details concerning the corrective figures, *e.g.*, the institutions that have been considered, or the particular localities to which corrections apply, may appear in the text of the report or in supplementary tables.

Area and Population of the District or Division to which this Return relates.

Area in Acres 1.551

Population (Last Census) 6.476

" (Estimated to middle of 1897) 6.460

Death Rates.
- General 14.64 — per 1,000 Population, estimated to middle of 1897.
- Infant (under one year of age) 131.1 — per 1,000 Births Registered.

In recording the facts under the various headings of Tables A and B, attention has been given to the notes endorsed on the Tables.

P. V. Mark *Medical Officer of Health.*

(Date) July 7, 1898.

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[2] 11.

(B)

TABLE OF **POPULATION, BIRTHS, AND OF NEW CASES OF INFECTIOUS SICKNESS,** *coming to the knowledge of the Medical Officer of Health, during the year* 1897, *in the* Houghton-le-Spring Urban *District; classified according to* DISEASES, AGES *and* LOCALITIES.

Names of Localities adopted for the purpose of these Statistics; Public Institutions being shown as separate localities. (See Note 2 on back of sheet.) (a.)	Population at all Ages. Last Census. (b.)	Population at all Ages. Estimated to middle of 1897. (c.)	Registered Births. (d.)	Aged under 5 or over 5. (e.)	New Cases of Sickness in each Locality, coming to the knowledge of the Medical Officer of Health. 1 Smallpox.	2 Scarlatina.	3 Diphtheria.	4 Membranous Croup.	5 Fevers. Typhus.	6 Fevers. Enteric or Typhoid.	7 Fevers. Continued	8 Fevers. Relapsing	9 Fevers. Puerperal	10 Cholera.	11 Erysipelas.	12	13	Number of such Cases Removed from their Homes in the several Localities for Treatment in Isolation Hospital. 1 Smallpox.	2 Scarlatina.	3 Diphtheria.	4 Membranous Croup.	5 Fevers. Typhus.	6 Fevers. Enteric or Typhoid	7 Fevers. Continued	8 Fevers. Relapsing	9 Fevers. Puerperal	10 Cholera.	11 Erysipelas.	12	13
Houghton	6.476	6.760	305	Under 5		2		.		1					.															
				5 upwds.		5		1		20					10															
Workhouse				Under 5											.															
				5 upwds.											1															
				Under 5																										
				5 upwds.																										
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				Under 5																										
				5 upwds.																										
Totals	6.476	6.760	305	Under 5		2		.		1					.															
				5 upwds.		5		1		20					11															

State here whether "Notification of Infectious Disease" is compulsory in the District Yes. Since when? February 1890 Besides the above-mentioned Diseases, insert in the columns with blank headings the names of any that are notifiable in the District, and fill the columns accordingly. State here the name of the Isolation Hospital used by the sick of the District. Mark (H) the Locality in which such Hospital is situated; and if not within the District, state where it is situated

NOTES ON TABLE B.

(See also Notes on back of Table A.)

NOTE 1. The present *Table B.* is concerned with population, births, and sickness (not with mortality) in the district or division to which the Table relates.

2. As stated in the heading of Col. *(a)*, *Public Institutions* should be regarded as separate localities, and the new cases of sickness in them should be separately recorded. Workhouses, Hospitals, Infirmaries, Asylums, and other establishments into which numbers of people, and especially of sick people, are received, are Public Institutions for the purpose of these statistics.

3. *Comments on any unequal incidence of notifiable disease upon the several localities, and considerations as to the local incidence of Consumption and other prevalent diseases, should be made in the text of the Report.*

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